

**DATA DISC**  
INCORPORATED

## M VIDEO DISC RECORDER

The M Video Disc Recorder uses interchangeable magnetic discs permanently encased in protective cartridges. The discs store one video frame on each concentric track, for a total of 131 frames per side and 262 frames per disc.



To operate, a cartridge disc is placed, selected side down, on the spindle. As this is done a shutter opens automatically so that the under-surface of the rotating disc is **in-contact** with the head.

The movable magnetic head can be positioned by digital control signals to change and/or display any frame on any selected side in an average time of  $\frac{1}{3}$  second. Other sides can be accessed by changing cartridge discs, which takes about a minute.

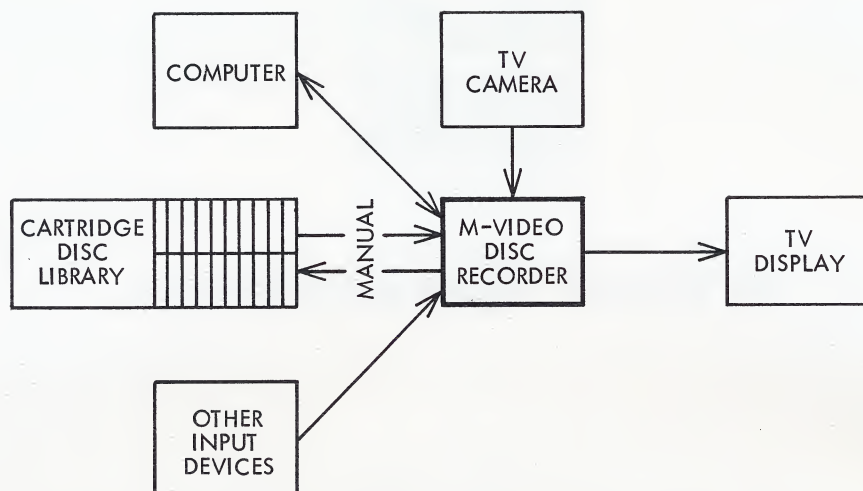
Frames can be stored in the form of analog video at frequencies up to 4.2 MHz, or digital video, up to 200,000 bits per frame (track).

High information density has been achieved by placing read/write heads in actual **contact** with thin-film plated discs. The technique of making **contact** without causing significant wear is a proprietary development of Data Disc, Inc. A recorded frame can be scanned continuously for many thousands of hours with negligible degradation in the quality of the picture.

Video electronics can be designed either by the customer, or by Data Disc to customer specifications.

### FEATURES

- Higher resolution and higher density through **in-contact** recording.
- Entire picture on one track — no multi-track sync problems.
- Stores 262 pictures per disc in analog or digital form.
- Any picture can be updated individually.
- Lower cost per channel.
- Interchangeable discs in protective cartridges.
- High reliability — one year guarantee.



## MAJOR APPLICATIONS

- Retrieval of frequently updated video information.
- High-resolution situation displays.
- Storage of transient phenomena.
- Stop-action recording.
- Electron microscope recording.

## SPECIFICATIONS

**Storage Capacity:** Up to 262 video frames per disc, one on each concentric track.

**Access:** To a frame on a selected side—1/3 second average.

### Form of storage

1. Digital video—up to 200,000 bits per frame.
- or 2. Analog video at frequencies up to 4.2 MHz.

**Head positioning:** By digital stepping motor that moves the head from track to track at 5 msec per step. Adjacent track access time is 100 msec. Average track access time is 333 msec.

**Cartridge:** Impact resistant plastic, which protects disc during loading, handling, and storage. Size: 14½" x 14½" x 9/16". Weight: 4 lbs with disc.

### Disc

Diameter: 12 inches.

Number of tracks: Up to 131 per side.

Rotation speed: 1800 rpm, 1/30 second per frame.

Recording surface: Thin-film nickel-cobalt plating.

### Head

Type: Single-gap, bifilar wound, in-contact with disc.

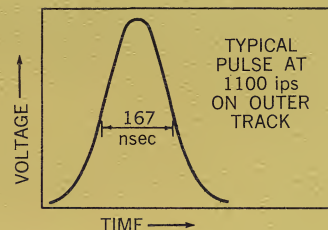
Number: One movable data head, plus up to 4 fixed heads on the timing-disc.

Inductance per winding: 12 microhenries.

Resistance per winding: 10 ohms.

Self-resonant frequency: 12 to 13 MHz.

Pulse width: See accompanying diagram



Pulse width diagram

### Input signal requirements

To record/reproduce head: 100 ma (65 ma minimum) to each head winding for saturation recording.

To head-positioning digital stepping motor: 14-volt pulses (unregulated) 500 ma, 200 pulses per second.

### Output signal upon replay

Pulses, 5 mv peak into 2000-ohm load from each head, when moving from positive to negative saturation or vice versa.

**Head/disc service life:** Guaranteed for one year. A lab life test has logged 24,000 hours to date.

### Permissible operating environment

Temperature: 50°F to 105°F.

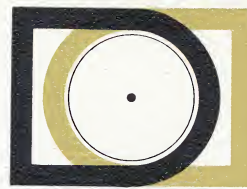
**AC power requirements:** 120 volts  $\pm 10\%$ , 60 Hz  $\pm 1\%$ , 0.6 amp., single phase. Drive motor-hysteresis synchronous.

### Size and Weight

Without cabinet: 15.5" x 17" x 10", 34 lbs.

With lid-type table cabinet: 13.6" x 24.4" x 19.1", 102 lbs.





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## F VIDEO DISC BUFFER



The F Video Disc Buffer will store up to 20 video frames, one on each concentric track, avoiding multi-track sync problems. Each track is monitored by its own fixed read/write head, so that any selection of frames can be displayed simultaneously on separate consoles and updated individually as required.

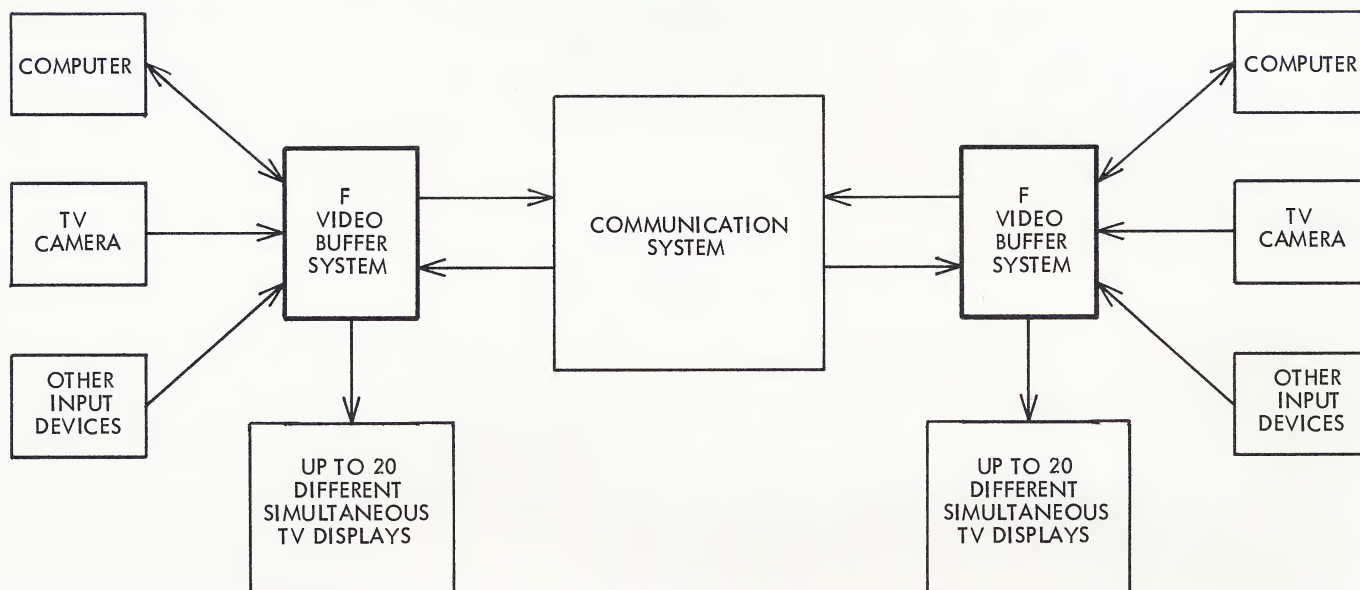
Frames can be stored in the form of analog video at frequencies up to 4.2 MHz, or digital video, up to 200,000 bits per frame. Very high resolution black-and-white or color video can be displayed by using multiple tracks to store a single frame.

High information density has been achieved by placing heads in actual **contact** with thin-film plated discs. The technique of making **contact** without causing significant wear is a proprietary development of Data Disc, Inc. A recorded frame can be scanned continuously for many thousands of hours with negligible degradation in the quality of the picture.

Video electronics can be designed either by the customer, or by Data Disc to customer specifications.

### FEATURES

- Higher resolution and higher density through **in-contact** recording.
- Entire picture on one track — no multi-track sync problems.
- Stores 1 to 20 pictures in analog or digital form.
- All pictures can be displayed simultaneously.
- Any picture can be updated individually.
- Lower cost per channel.
- TV raster or XYZ plotting display.
- High reliability — one year guarantee.



## MAJOR APPLICATIONS

- Information retrieval sub-systems.
- Time-shared computer sub-systems.
- High-resolution situation displays.
- Storage of transient phenomena.
- Correlation studies.
- Stop-action recording.
- Buffer for video transmission.

## SPECIFICATIONS

**Storage Capacity:** 1 to 20 video frames (tracks).

**Access:** Immediate access to record or reproduce any track.

**Form of Storage:** 1. Digital video—up to 200,000 bits per frame, or 2. Analog video at frequencies up to 4.2 MHz.

### Disc

Diameter: 12 inches.

Number of tracks: Up to 20.

Rotation speed: 1800 rpm, 1/30 second per frame.

Recording surface: Thin-film nickel-cobalt plating.

### Head

Type: Single gap, bifilar wound, **in-contact** with disc.

Number: 1 to 20 (one per track) plus timing heads.

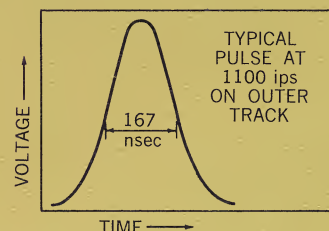
Inductance per winding: 12 micro-Henries.

Resistance per winding: 10 ohms.

Self-resonant frequency: 12 to 13 MHz.

Head-to-head jitter:  $\pm 75$  nsec.

Pulse width: See accompanying diagram.



Pulse width diagram

### Input signal requirements

To each record/reproduce head: 100 ma (65 ma minimum) to each head winding for saturation recording.

### Output signal upon replay

Pulses, 5 mv peak into 2000-ohm load from each read/write head when moving from positive to negative saturation, or vice-versa.

### Head/disc service life

Guaranteed for one year. A lab life test has logged 24,000 hours to date.

### Permissible operating environment

Temperature: 50°F to 105°F, no more than 20°F change per hour.

Shock: 5 g's in any direction without damage.

### AC Power requirements

120 volts  $\pm 10\%$ , 60 Hz  $\pm 1\%$ , 1.2 amp., single phase.

Drive Motor: Hysteresis synchronous.

**Size:** 8 $\frac{3}{4}$ " x 19" x 19 $\frac{3}{4}$ ", for rack mounting.

**Weight:** 52 lbs.